

## **Variation of Air Temperature of Anuradhapura in Dry Zone of Sri Lanka**

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The climate of Sri Lanka is characterized as a tropical monsoonal. Temperature is one of the most important elements in the tropical climate. Anuradhapura is situated in the dry zone of Sri Lanka and is one of the historical tourist attracted places on the Island. Paddy cultivation is the key farming practice and the irrigation system is one of the main characters in the cultural landscape in Anuradhapura. The main objective of this study was to examine the long-term temperature variation in Anuradhapura. The annual average temperature data has been collected from Anuradhapura station for the period from 1920 to 2019. The data was obtained from the Department of Meteorology, Colombo. To identify long-term variation in temperature, the data set was divided into two observation periods from 1920 to 1969 and 1970 to 2019. The trend was estimated from 1920 to 2019 using the time series and linear regression techniques. The Man-Kendall statistical test was applied to identify significant and non-significant monotonic trends. The result revealed that the annual average temperature in Anuradhapura has been increased by an amount of 0.9 °C during the 1970-2019 period compared to the 1920-1969 period. The annual average temperature has shown a statistically significant ( $P < 0.05$ ) increasing trend during 1920-2019. The rate of increase of annual average temperature is in the order of 0.017°C per year. The study revealed that the temperature has a significant increasing trend during the last 100 years in Anuradhapura. The temperature increases will negatively impact the irrigation water management system, paddy productions, other human activities and natural environmental processes of Anuradhapura.

**Keywords:** Annual, Dry zone, Temperature, Trend, Variation